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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/600,671

06/20/2003

Carl Staclin

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22879 7590 10/31/2007

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

HOLMES, MICHAEL B

ART UNIT

PAPER NUMBER

2121

MAIL DATE

DELIVERY MODE

10/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/600,671	Applicant(s) STAELIN ET AL.	
	Examiner Michael B. Holmes	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-36 is/are allowed.
- 6) ☒ Claim(s) 1-33 & 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

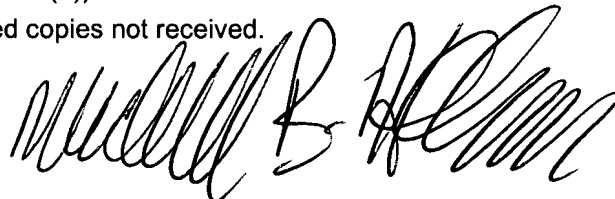
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |



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Examiner's Detailed Office Action

1. This Office Action is responsive to communication, filed 07/16/2007.
2. Claims 1-33 & 37 have been examined.

Information Disclosure Statement

3. Applicant is respectfully remind of the Duty to disclose 37 C.F.R. 1.56 all pertinent information and material pertaining to the patentability of applicant's claimed invention, by continuing to submitting in a timely manner PTO-1449, Information Disclosure Statement (IDS) with the filing of applicant's of application or thereafter.

Drawings

4. The formal drawings submitted have been reviewed by the Office of Initial Patent Examination (OIPE) and/or the USPTO Office of Draftperson's Patent Drawings Review.

Specification

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is required in correcting any errors of which applicant may become aware in the specification. Appropriate correction is required.

Claim Interpretation

6. Office personnel are to give claims their “**broadest reasonable interpretation**” in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See *also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. . . . The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”). *see* MPEP § 2106

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. The invention as disclosed in claims 1-33 & 37 are rejected under 35 U.S.C. § 101 as being non-statutory subject matter. *see In re Comiskey*, Case No. 2006-1286, at 8, 16 & 17 (Fed. Cir., September 20, 2007). Only if the requirements of § 101 are satisfied is the inventor “allowed to pass through to” the other requirements for patentability, such as novelty under § 102 and, non-obviousness under § 103. Moreover, “...when an abstract concept has no claimed practical application, it is not patentable.”

9. *No preemption is permitted* i.e., when a claim is so broad that it reads on both statutory and nonstatutory subject matter, *it must be amended*. A claim that recites a computer that solely calculates a mathematical formula is not statutory. In other words, one may not patent a process that comprises every “substantial practical application” of an abstract idea, because such a patent in “practical effect would be a patent on the [abstract idea] itself.” Regarding claims 1-33 & 37, “a method of training a neural network with input data,” would in fact cover virtually any and all forms of methods of training a neural network with input data. Moreover, nothing is specified in the claims to limit the invention to a particular application e.g., image upscaling. Without clearly stating in the claim a particular application, it *preempts* all forms of knowledge. Where as, the courts have also held that a claim may not preempt ideas, laws of nature or natural phenomena. The concern over preemption was expressed as early as 1852. See Le Roy v. Tatham, 55 U.S. (14 How.) 156, 175 (1852) (“A principle, in the abstract, is a fundamental truth; an original

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cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”); See Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S.127, 132, 76 USPQ 280, 282 (1948).

10. The claims fail to provide a “useful, concrete or tangible result.” Moreover, there must be a practical application, by either (1) transforming (physical thing) or (2) by having the **FINAL RESULT** (not the steps) achieve or produce a “useful” (specific, substantial, AND credible), “concrete” (substantially repeatable/non-unpredictable), AND “tangible” (real world/non-abstract) result. Moreover, the claims are directed to an abstract idea rather than a practical application of an abstract idea which would produce a “useful, concrete or tangible results.” Accordingly, the claims fail to provide a practical application and is insufficient to establish a real world “tangible” result, *see In re Warmerdam*, 31 USPQ2d, 1354.

11. Devoid of such, applicant’s claimed invention is an abstract idea e.g., a computational model or a mathematical manipulation of a function or equation. A process that merely manipulates an abstract idea or performs a purely mathematical algorithm is non-statutory despite the fact that it might inherently have some usefulness. *see In re Sarkar*, 588 F.2d at 1335, 200 USPQ at 139, wherein the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a “process” under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.

12. A claim is limited to a practical application when the invention as claimed, produces a concrete, tangible and useful result; i.e., the invention recites a steps or a process or act of

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producing something that is concrete, tangible and useful. *See AT &T*, 172 F.3d at 1358, 50 USPQ2d at 1452. *See* MPEP § 2106(IV) The claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02. Remember, the claims define the property rights provided by a patent, and thus require careful scrutiny. Therefore, it is not enough to set forth invention in the specification. The claims must also reflect the scope and breath of applicant’s invention. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551(CCPA 1969). The situation in this application appears to be more difficult since it does not appear that the practical application is contained within the specification.

Correspondence Information

13. Any inquires concerning this communication or earlier communications from the examiner should be directed to Michael B. Holmes, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile transmission (571) 273-3686 or email michael.holmesb@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner’s Supervisor, Anthony Knight, may be reached at (571) 272-3687.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313); located on the first floor

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of the south side of the Randolph Building.

Finally, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Moreover, status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) toll-free @ 1-866-217-9197.

Michael B. Holmes

Patent Examiner

Artificial Intelligence

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United States Department of Commerce

Patent & Trademark Office

Friday, October 26, 2007

MBH

A handwritten signature in black ink, appearing to read "Michael B. Holmes", with a stylized, cursive script.